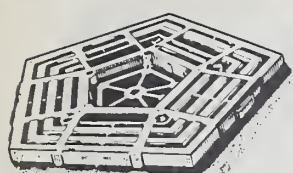


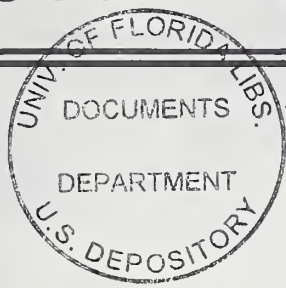
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Department of Defense

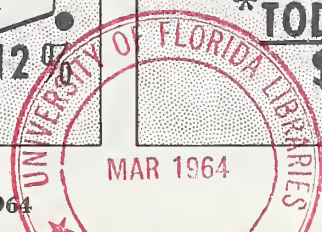
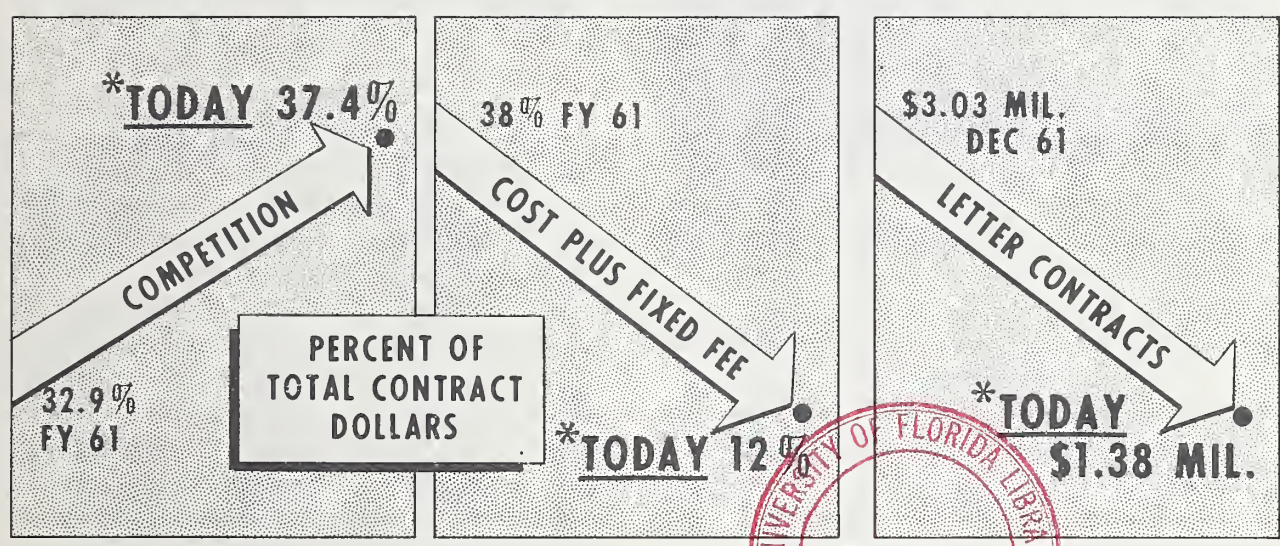
Cost Reduction *Report*

March 1964



"I regard waste as the continuing enemy of our society, and the prevention of waste—of resources, of lives, of opportunities—to be the most pressing of the responsibilities of our government."
Lyndon B. Johnson, 1959

COMPETITION UP, CPFF AND LETTER CONTRACTS DOWN



*1st 6 months FY 1964

COMPETITION SAVINGS HIT QUARTER-BILLION

Nothing lowers prices like competition. Defense buyers prove daily that each dollar placed competitively earns at least a 25-cent dividend. In fact, reports on thousands of items bought competitively for the first time demonstrate net savings higher than this figure.

- An adapter to fit the H22-A warhead to its missile fell 53 percent in price on the first competitive buy, from \$2,000 to \$933 a unit for savings of \$59,013.
- Paint remover costing \$150 per drum noncompetitively had a price of \$63 when first competed, a reduction of 58 percent for savings of \$130,311.

(Cont. P. 7, Competition)

CPFF CONTRACTS AT 8-YEAR LOW

The uneconomic cost-plus-fixed-fee contract—long the bane of cost-conscious contracting officers—is in full retreat to an 8-year low.

Despite a barrage of criticism from economists and Congressmen alike, CPFF usage had surged upward from 19.7 percent of total awards in FY 1955 to a high of 38 percent in FY 1961. Cost reduction emphasis on contractual rewards and penalties to hold costs down sparked the turnaround from the 38 percent peak and shoved CPFF usage down to 12 percent as of December 31, 1963—a feat that is estimated to save Defense \$436 million as a result of FY 1963 contracts.

(Cont. P. 7, CPFF)

Cost Reduction *Report*

Published by the Office of the Assistant Secretary of Defense (Installations & Logistics). Issue #3.

SUBCONTRACT COMPETITION

Competed subcontracts save Defense dollars, too.

- Sample savings from competition at one contractor's plant averaged 22.5 percent in FY 1963, with individual subcontract savings ranging up to 35 percent.
- At another plant, 23 low-cost items shifted to competition in the past two years netted savings of \$2.8 million.

Savings potential from subcontract competition is substantial since primes now price-compete only a "guesstimated" 25 percent of subcontract dollars. An increase to 40 percent (about the same as the DoD FY 1967 goal for competition at prime level) could add \$1.2 billion price-competed subcontract dollars, netting primes \$300 million in lower subcontract prices.

The nonprofit Logistics Management Institute will pilot-test techniques of advance procurement planning, competitive forecasting and progress reporting at selected contractors' plants. Results should help Defense set guidelines for validating purchase system savings reported in contractor cost reduction programs. (See story at right.)



Procurement office at Martin-Orlando's guided missile and electronics facility where 80 percent of \$70 million in FY 1963 purchase orders were placed competitively.

INDUSTRY PLEDGES ECONOMIES

Indications are that industry's cost-reduction efforts will provide the Nation with a multimillion dollar add-on to the Department of Defense's own \$4 billion cost-reduction undertaking.

To date, over 1,200 favorable responses have been received to the letters sent 7,500 major defense contractors by President Johnson and Secretary McNamara on December 2, 1963, to enlist industry support in the economy drive. Details are well along in shaping the considerations that will be given contractor cost savings in awarding future contracts and in fixing target profit rates.



SECOND SOURCE SINKS COSTS

Rubber-impregnated cloth bags used as air-filled pontoons to float M108 and M109 self-propelled howitzers across rivers cost the Department of Defense \$800,000 less when General Motors Corp. found a second source to compete with the previous sole-source subcontractor.

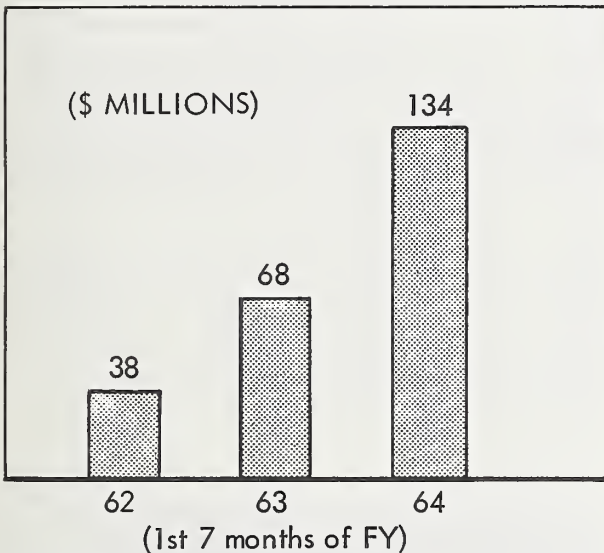
TWO STEPS TO FORMAL ADVERTISING

It pays to advertise—even when it takes two steps to do it.

One-step formal advertising is well known with its firm specs, invitations-for-bids, public opening, and award to low bidder. Not so well known is the two-step formal advertising procedure, designed to permit fixed-price competition on the basis of publicly opened bids by competent suppliers in cases when initial specifications are not sufficiently precise for one-step advertising.

In Step One, bidders submit unpriced proposals for technical evaluation. In Step Two, those qualified then submit sealed bid price proposals. Low bid wins.

GROWTH OF TWO-STEP ADVERTISING



ELECTRONIC BRAINS SPEED BID ANALYSIS



Oscar J. Downes, left, data systems analyst for the Defense Fuel Supply Center, Washington, D.C., a DSA field activity, holds reel of tape containing input data used to determine low bidders for supplying fuels to the military services.

Larry Clark, a digital computer programmer at the Naval Ordnance Laboratory, Silver Spring, Md., where the machine is used, helps with the run. Input data on reel contains information from 3,000 cards. Average time to determine minimum cost solution is four hours.

* 國內の購入

Price competition is international. Army Procurement Agency, Japan, is hard at work to substitute competitive for sole-source buying. A drive is on for drawings and specifications for spare parts for Japanese-made vehicles. After extensive negotiations, these are being obtained, screened for accuracy, and translated. New sources are being found, helped to understand U.S. procurement procedures and forms, and encouraged to make competitive proposals. Results include:

- A 53-percent price drop (\$1.90 to \$0.93) on the tarpaulin bow for the Japanese-built $\frac{3}{4}$ -ton truck, for a savings of \$4,100 on the first competitive buy.
- A 25-percent reduction in the cost of the armature assembly, from \$11.66 to \$8.66 per unit for a one-buy savings of \$5,571.

*Translation: Purchasing in Japan.

LARGEST FIXED-PRICE CONTRACT IN BUWEPs HISTORY

Largest fixed-price contract in BuWeps annals is the \$662 million award of February 26, 1964 to McDonnell Aircraft Corporation for the Navy and Air Force FY 1964 buy of F4 Phantom aircraft. Seven of the eight previous buys of this tri-service plane had been under cost-type or incentive contracts. The eighth, a fixed-price contract, had covered only 24 aircraft.

Rear Admiral K. S. Masterson, BuWeps' Chief, states: "I hope the contractor makes a good profit out of this contract because, if he does, it will be by improved management, it will affect future aircraft buys, and it will result in lower overall prices to the Government."

INCENTIVE CONTRACTS JUMP \$3 BILLION IN SINGLE YEAR

Incentive contracts spurted to a \$7.2 billion high in FY 1963 from \$4.1 billion in FY 1962. This \$3 billion rise matches the CPFF drop in the FY 62-63 period—from \$8.4 to \$5.4 billion.

Turning CPFF candidates into incentive channels is no easy chore. It calls for extensive preaward planning and close postaward surveillance. Take the case of the TITAN III Space Launch System. Planning consumed 1 full year in which every aspect of a 45-month program (involving thousands of significant actions) was analyzed. Today, Air Force electronic computers track program progress through 2,500 individual events reported biweekly. Contractor profits drop whenever timing falls short of any one of 323 milestone dates, or when technical performance (such as weight reduction) misses goals, or when costs exceed targets. Profits increase when goals are surpassed.

More Defense dollars travel the incentive route today because this contract technique provides better assurance that we get what we pay for and pay for only as much as we get. Value of incentive contracts jumped from 14.4 percent of total procurement in FY 1961 to 27.5 percent in FY 1963—and today incentives stand at 39 percent of total dollar awards.

If intensive training is any indicator, more and better incentives are in the offing. This year 6 major buying centers will conduct 28 weeklong Advanced Incentive Contracting Workshops to sharpen the incentive knowhow of 850 engineers, program managers, and contracting officers.

MIDDLEMAN OUT

Direct purchase breakout became a new cost reduction project on January 1, 1964.

Here is how it works. The Government spots those parts and components which weapons systems primes had been buying from vendor sources, and then itself buys these pieces directly from the vendors. This eliminates the overhead and profit the primes had been charging the Government on these parts and components.

Reports from one activity indicate savings averaging 29 percent on several hundred thousand dollars of spare parts procurements broken out for direct purchase in the first quarter of FY 1964.

The FY 1964 goal for this cost reduction area is \$11 million.

The following factors weigh heavily in such breakout decisions:

- Risk of impairing safe, reliable, and effective operation of the equipment for which the part or component is intended.
- Timely support of the weapons system.
- Adequacy of the component manufacturer's quality control and inspection (sometimes done by the prime contractor).
- Stability of the design of the equipment into which the broken-out part or component is to be integrated.
- Administrative costs of direct purchase breakout.

LIFE-CYCLE COSTING

Award to the low bidder is not always sound economics—particularly on reprocurments.

Savings from competition could be more than offset by costs of inventory support for different versions of an item—which sometimes occurs when performance-type specifications are used. Even a relatively simple item is likely to have 50 percent nonstandard spare parts, each requiring separate cataloging, warehousing, and management treatment throughout its inventory life.

Another consideration is technical reliability since maintenance expense is a significant factor in life-cycle costing.

Two current efforts are directed toward weighing total life-cycle costs against one-time competitive savings.

- The Logistics Management Institute, a non-profit research organization, is analyzing Department of Defense and industry data on this subject in order to recommend planning guidelines for use in Defense procurement.
- The Aeronautical Systems Division of Air Force Systems Command at Wright-Patterson Air Force Base began tests in July 1963 to determine effects of internal logistical costs. These tests will be completed in FY 1965.

BREAKOUTS CUT SOLE-SOURCE BUYS

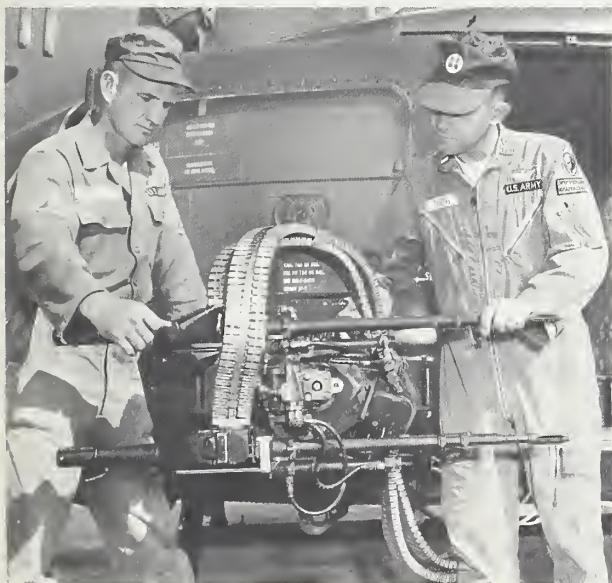
Savings are boosted when imaginative screening of high-cost spare parts enables price-deflating competition to replenish initial stocks obtained noncompetitively from the equipment manufacturer.

The High-Dollar Replenishment Spares Breakout Program got its start on aeronautical spare parts when research in the fall of 1961 showed that 5 percent of the items accounted for 75 percent of the dollars.

In a follow-on 6-month test at 3 major activities, completed in June 1962, 937 items of aeronautical spare parts totaling \$209 million in annual buy value were analyzed for their competitive procurement potential.

Result? 78 percent more aeronautical spare parts dollars were competed at these test sites in FY 1962 than in FY 1961 at prices averaging 25 percent less than the previous sole-source procurements. A longer and broader look shows that the DoD-wide competitive ratio of aeronautical spare parts increased from 15 percent in FY 1961 to 30 percent in FY 1962 and then to 35 percent in FY 1963.

Extension of these procedures to *all* replenishment spares—not just aeronautical spares—lifted their competitive ratio 25 percent in the FY 1961-FY 1963 period.



CPIF REPLACES CPFF

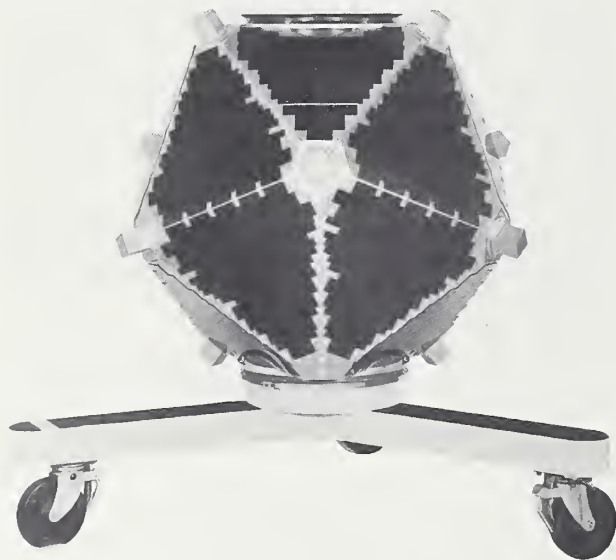
The U.S. Army Weapons Command saved \$500,000 and Emerson Electric Manufacturing Co. increased its profits when a Cost-Plus-Incentive-Fee contract supplanted a Cost-Plus-Fixed-Fee contract for the Helicopter Quad Machine Gun System M6E3 pictured at left.

FEE CRITERIA IN ORBIT

If Vela Hotel twin satellites reach their targeted lifetime in orbit, Space Technology Laboratories of Redondo Beach, Calif., the prime contractor, could earn \$600,000 in additional fees.

The Cost-Plus-Incentive-Fee contract for the satellites, placed in April 1962 following a solicitation of 26 sources and receipt of 7 proposals, had a target fee of \$1,077,700 which could be increased or diminished up to \$325,000, depending on final cost and up to \$675,000 depending on technical performance. Thus, 100 percent cost performance success could bring a final fee of \$2,077,200; a 100 percent failure could reduce fee to \$77,200.

To date, target cost of \$13.9 million has been overrun \$2 million, thus reducing fee \$225,000. Conversely, technical performance has exceeded goals. Performance criteria are: reliability, early demonstration, and lifetime in orbit.



Vela Hotel Twin Satellite

ALASKAN TRIO FREEZES OUT SOLE SOURCES



Left to right are Contracting Officers F. D. Eshenhower, D. A. Naish, and L. O. Jones whose 90 percent price-competed procurements in FY 1963 helped keep Alaskan Army Command among the top commands in percentage of contracts placed by price competition.

COMPETITION FOLLOWS BREAKOUT AT NPO WASHINGTON

Unit price of KVA constant speed drives (used in electrical systems of Navy F-4B and Air Force F-4C fighter aircraft) fell \$1,500 when NPO Washington bypassed the aircraft manufacturer to buy 855 units directly from the then sole-source vendor.

Not content with this saving, NPO Washington, on a subsequent procurement of 1,315 units, exploited the advent of competition to this field by going to two-step advertising.

Result: an additional \$2,000 drop in unit price.

ESO PROVES VENDORS BEAT PRIMES' PRICES

Navy's Electronics Supply Office frequently halves prices by buying tubes, crystals and dry batteries directly from vendors. Some comparisons of prime-equipment contractors' prices for tubes and vendors' prices are shown below:

<i>Tube</i>	<i>Equip. mfrs. price</i>	<i>Tube vendor's price</i>	<i>Quantity bought</i>	<i>Savings</i>
A -----	\$2, 400	\$1, 100	170	\$221, 000
B -----	5, 655	1, 542	20	82, 260
C -----	3, 438	852	20	51, 720
D -----	29, 429	9, 800	7	137, 403
E -----	2, 447	1, 300	151	173, 197
F -----	3, 136	1, 458	151	253, 378

CPFF (from Page 1)

Defense officials estimate that each dollar shifted to firm fixed-price and incentive contracts reduces final costs by at least 10 percent.

Army, Navy, and Air Force share CPFF-reduction honors almost equally, each department having cut its CPFF placements well over 50 percent since FY 1961, as indicated in the chart below:

PERCENT CPFF

	FY 1961	FY 1963	6 mos. FY 1964
Army-----	29.2	15.6	10
Navy-----	27.7	20.0	11.3
Air Force-----	46.4	27.9	16.9
DoD-----	36.6	20.7	12.0

LETTER CONTRACTS TUMBLE 54 PERCENT FROM 1962 HIGH

Letter contracts, object of intensive management attack, fell 54 percent from the \$3 billion level of January 1962.

Letter contracts contain no incentives to hold costs down because they authorize contractors to start work before pricing is agreed upon. Consequently, the quicker these are converted to a firm contract, the less the ultimate cost to the Government is likely to be.

At the end of CY 1963 there were 73 percent fewer letter contracts on hand than at the end of CY 1961.

Procurement managers predict that letter contracts will plummet another \$400 million between January and July 1964.

The status of letter contracts at the end of each of the past 3 calendar years follows:

LETTER CONTRACTS ON HAND

	Number	Value in millions
12/31/61-----	781	\$2,671
12/31/62-----	670	3,031
12/31/63-----	211	1,387

COMPETITION (from Page 1)

- An industrial-type 4-cycle gasoline engine cost the Government \$453 a unit before competition and \$328 when competed, a 28-percent price reduction for savings exceeding \$400,000.

Applying the conservative 25 percent measure to FY 1963's \$948 million gain over and above the FY 1961 level of competitive awards produces the FY 1963 savings estimate of \$237 million. Army, Navy, Air Force, and Defense Supply Agency buying by price competition climbed to 37.1 percent of total contract awards for FY 1963, up from the 35.6-percent rate of FY 1962, and up even further from the FY 1961 rate of 32.9 percent.

Sources of increased price competition since FY 1961 are shown below:

	Estimated svgs. from price competition	Percent price competition	
	(Millions)	FY 1961	FY 1963
Aircraft, components and parts-----	\$50	6.5	9.7
Missiles, components and parts-----	34	2.2	3.9
Electronics and communications equipment--	52	26.6	29.1
Vehicles-----	28	42.3	45.5
Ships and components-----	58	60.8	74.6
Weapons and ammunition-----	7	31.2	32.3
Supplies and services-----	8	71.5	74.5
Total -----	237	32.9	37.1

FLARE

MORE FOR LESS

UNIVERSITY OF FLORIDA



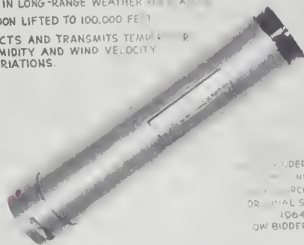
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MULTI-YEAR BUYING

AMT -13 RADIOSONDE

FUNCTION

USED IN LONG-RANGE WEATHER BALLOON LIFTED TO 100,000 FEET
DETECTS AND TRANSMITS TEMPERATURE, HUMIDITY AND WIND VELOCITY VARIATIONS.



FIVE YEAR AWARD

	ONE YEAR	FIVE YEAR
QUANTITY	17,075 UNITS	83,315 UNITS
UNIT PRICE	12	12
NET SAVINGS THIS BUY	\$565,000	\$2,122,033

Multiyear procurement—that is, consolidating 2 or more years' needs in one contract—attracts keener and broader competition, eliminates administrative costs of repeated purchases, knocks out recurring start-up costs, makes standardization easier, and encourages industry investment in tooling and facilities.

Multiyear invitations for bids call for unit prices on a single-year base as well as on the multiyear base. Invariably, the multiyear unit price is markedly lower than the single-year unit price. The large quantities involved in multiyear procurement attracted competition to the hitherto sole-source ATM-13 Radiosonde, a weather forecasting device used at high altitudes. This competition caused the previous sole source to drop his single-year unit price from \$170 to \$109.80 and

elicited from him a 5-year unit price of \$99.78—neither price low enough to beat the low bidder's single-year unit price of \$76.70, or 5-year unit price of \$74.31. The \$35.10 differential between low bidder and prior sole source on a 1-year quantity of 17,075 units aggregated \$565,000. The aggregate differential on a 5-year base covering 83,315 units was \$2,122,033, which included adjustments for eliminating administrative costs of four procurements.

The low bid on a FY 1963 quantity of 15,894 small 4-cycle engines for the Army averaged \$215.01 per unit, whereas the low bid on 52,292 units for FY's 1963, 64, and 65 averaged \$195.50 each—a \$19.51, or 9 percent reduction for savings of \$1,020,435 on the 3-year quantity.

The recent purchase of a 2-year engine requirement for the 5-ton 6x6 cargo truck shaved 5 percent off the single-year price, resulting in savings exceeding \$1 million. Moreover, evidence indicated there would have been no competition without the multiyear approach.

SMALL 4 CYCLE ENGINES
USED IN LARGE QUANTITIES
BY ARMY ON A VARIETY OF APPLICATIONS



QUANTITY	AV. UNIT PRICE
FY 1963 ONLY.....15,894.....	\$215.01
FY'S 63, 64, 65.....52,292.....	\$195.50
SAVINGS, PER UNIT.....	\$19.51
SAVINGS ON 3 YEAR QUANTITY.....	\$1,020,435 (9%)

PROCUREMENT COST REDUCTION GOALS

The Defense Cost Reduction Program is directed at achieving savings of \$4 billion a year by FY 1967 and each year thereafter by (1) Buying Only What We Need, (2) Buying at the Lowest Sound Price, and (3) Reducing Operating Costs. Twenty-five projects have been formally organized in these areas. Although only 3 of the 25 projects are directed at Buying at the Lowest Sound Price, these 3 account for over one-fourth of total program, and will achieve annual savings exceeding \$1 billion a year:

	Accomp. FY 1963	(Millions of dollars) Goals	
		FY 1964	FY 1965
1. Shift from Noncompetitive to Competitive Procurement (from 32.9 percent of awards in FY 1961 to 39.9 percent in FY 1965).....	237	304	375
2. Shift from CPFF to Fixed or Incentive Price Contracts (from 38 percent of awards in FY 1961 to 12.3 percent in FY 1965).....	436	573	668
3. Breakout for Direct Purchase.....	---	11	24
4. TOTAL—Buying at Lowest Sound Price.....	673	888	1,067